

**WHAT IS CLAIMED IS:**

1. A system comprising:  
a passive optical network element; and  
a first ultra wideband adapter coupled to the passive optical network element, the first ultra wideband adapter coupled via a data communication line to a second ultra wideband adapter, the second ultra wideband adapter having a connection to an end user computing device.
2. The system of claim 1, wherein the communication line is a coaxial cable and wherein the coaxial cable is coupled to the second ultra wideband adapter by a first coaxial cable path connected to a passive cable splitter element.
3. The system of claim 2, wherein the passive cable splitter element includes a connection to a second coaxial cable path for carrying television signals, the second coaxial cable path connected to a set top box.
4. The system of claim 3, wherein the set top box is coupled to a television monitor device.
5. The system of claim 1, wherein the first ultra wideband adapter includes a first input coupled to a video output of the passive optical network element and includes a second input coupled to an Ethernet data output of the passive optical network element.
6. The system of claim 5, wherein the passive optical network element further includes a telephone output connected via a telephone line to an end user telephone device.
7. The system of claim 6, wherein the end user telephone device and the end user computer device are located within a common residential unit.

8. The system of claim 1, wherein the passive optical network element has an input to receive an optical communication signal.

9. A system comprising:

a passive optical network element having an input to receive an optical communication signal and having a video output, a data output, and a telephony output;

a first ultra wideband adapter coupled to the passive optical network element, the first ultra wideband adapter having a first input coupled to the video output and a second input coupled to the data output, the first ultra wideband adapter having an ultra wideband data output coupled via a data communication line to a cable splitter element, the cable splitter element connected to a first coaxial cable path and a second coaxial cable path;

a second ultra wideband adapter having an input coupled to the second coaxial cable path and having an output data connection configured to interface with a personal computer.

10. The system of claim 9, wherein the first coaxial cable path is coupled via a set top box to a video monitor device.

11. The system of claim 9, wherein the video output is an F connector.

12. The system of claim 9, wherein the data output is a 100 base T Ethernet interface.

13. An ultra wideband adapter comprising:

a first input coupled to a far end ultra wideband adapter via an intermediary coaxial cable communication line, the far end ultra wideband adapter coupled to a passive optical network data source; and

a data output configured for connection to a data interface of a computer device.

14. An ultra wideband adapter comprising:  
a first input coupled to a video output of a passive optical network element;  
a second input coupled to a data output of the passive optical network element;  
and  
a data output coupled via a data communication line to a cable splitter element,  
the cable splitter element connected to a first coaxial cable path and a  
second coaxial cable path, at least one of the first and the second coaxial  
cable paths connected to a remote ultra wideband adapter.
15. A method of processing communication data comprising:  
receiving a video signal from a passive optical network element;  
receiving a data signal from the passive optical network element; and  
communicating the video signal and an ultra wideband signal that is derived from  
the data signal along a coaxial cable.
16. The method of claim 15, further comprising receiving the ultra wideband  
signal and converting the ultra wideband signal to a data signal.
17. The method of claim 16, further comprising providing the data signal to an  
input of a computer device.
18. The method of claim 15, wherein the ultra wideband signal is position or  
amplitude modulated across a range of spectra extending anywhere from 1GHz to  
10GHz.

19. A method of communicating data using ultra wideband signals, the method comprising:

receiving data from a computer device at an ultra wideband adapter;  
generating an ultra wideband signal carrying information derived from the data;  
communicating the ultra wideband signal to a far end ultra wideband adapter over  
a communication medium; and  
providing an output of the far end ultra wideband adapter to a passive optical  
network element.

20. The method of claim 19, further comprising generating an optical  
communication signal at the passive optical network element in response to receiving the  
output of the far end ultra wideband adapter

21. The method of claim 19, wherein the communication medium is a coaxial  
cable and wherein the ultra wideband adapter is an ultra wideband transceiver coupled to  
the coaxial cable.

22. The method of claim 21, wherein the passive optical network element  
provides power to the ultra wideband adapter over the coaxial cable.

23. The method of claim 19, wherein the passive optical network element is a  
passive optical network terminal.